

WE CLAIM:

1. A finishing composition that is dispersible in water comprising a urethane comprising the reaction product of:

- (a) a polyisocyanate;
- (b) a long chain alcohol; and
- (c) a polyethylene oxide containing at least one hydroxy group,

wherein the urethane has a weighted average hydrophilic / lipophilic balance (HLB) ranging from about 1 to about 11.

2. The finishing composition of claim 1, wherein the polyisocyanate comprises a triisocyanate.

3. The finishing composition of claim 3, wherein the long chain alcohol contains about 12 to about 24 carbon atoms.

4. The finishing composition of claim 1, wherein the long chain alcohol is a stearyl alcohol.

5. The finishing composition of claim 1, wherein the polyethylene oxide comprises a monomethoxy polyethylene oxide containing one hydroxy group.

6. The finishing composition of claim 5, wherein the monomethoxy polyethylene oxide has a molecular weight ranging from about 350 to about 2000.

7. The finishing composition of claim 1, wherein the urethane comprises the reaction product of a triisocyanate, a monomethoxy polyethylene oxide containing one hydroxy group, and stearyl alcohol.

8. The finishing composition of claim 1, wherein the weighted average HLB value is in the range of about 2 to about 8.

9. The finishing composition of claim 1, wherein the weighted average HLB value is in the range of about 4 to about 7.

10. The finishing composition of claim 1, wherein the polyethylene oxide ranges from about 5 to about 55 weight percent based on the weight of the urethane.

11. The finishing composition of claim 1, wherein the polyethylene oxide ranges from about 10 to about 40 weight percent based on the weight of the urethane.

12. The finishing composition of claim 1, wherein the polyethylene oxide ranges from about 20 to about 35 weight percent based on the weight of the urethane.

13. The finishing composition of claim 1, wherein the polyethylene oxide comprises between 1 and about 200 ethylene oxide units.

14. A finishing composition dispersible in water comprising:

(a) a urethane comprising the reaction product of:

(i) a polyisocyanate;

(ii) a polyethylene oxide having at least one hydroxy group,

wherein the urethane has a weighted average hydrophilic / lipophilic balance (HLB) ranging from about 1 to about 11; and

(b) a stainblocker, an anti-soiling agent, or mixtures thereof.

15. The finishing composition of claim 14, wherein the polyisocyanate comprises a triisocyanate.

16. The finishing composition of claim 14, further comprising a long chain alcohol containing about 12 to about 24 carbon atoms.

17. The finishing composition of claim 14, wherein the long chain alcohol is a stearyl alcohol.

18. The finishing composition of claim 24, wherein the polyethylene oxide comprises a monomethoxy polyethylene oxide containing one hydroxy group.

19. The finishing composition of claim 18, wherein the monomethoxy polyethylene oxide has a molecular weight ranging from about 350 to about 2000.

20. The finishing composition of claim 14, wherein the urethane comprises the reaction product of a triisocyanate, a monomethoxy polyethylene oxide containing one hydroxy group, and stearyl alcohol.

21. The finishing composition of claim 14, wherein the polyethylene oxide comprises a polyethylene oxide group and a (C₁ - C₂₄) alkoxy group.

22. The finishing composition of claim 14, wherein the polyethylene oxide comprises between 1 and about 200 ethylene oxide units.

23. The finishing composition of claim 14, wherein the weighted average HLB value is in the range of about 2 to about 8.

24. The finishing composition of claim 14, wherein the weighted average HLB value is in the range of about 4 to about 7.

25. The finishing composition of claim 14, wherein the urethane has a total polyethylene oxide content between about 5 and about 55 weight percent the based on the weight of the urethane.

26. The finishing composition of claim 14, wherein the urethane has a total polyethylene oxide content between about 10 and about 40 weight percent based on the weight of the urethane.

27. The finishing composition of claim 14, wherein the urethane has a total polyethylene oxide content between about 20 and about 35 weight percent based on the weight of the urethane.

28. The finishing composition of claim 14, wherein the stainblocker comprises a sulfonated aromatic polymer.

29. The finishing composition of claim 28, further comprising a divalent metal salt.

30. The finishing composition of claim 14, wherein the stainblocker is a polymer comprising the reaction product of one or more acrylic acid monomers.

31. The finishing composition of claim 30, wherein one or more of the acrylic acid monomers comprises an α -substituted or β -substituted acrylic acid.

32. The finishing composition of claim 31, wherein one or more of the acrylic acid monomers comprise methacrylic acid.

33. The finishing composition of claim 14, wherein the stainblocker is a polymer comprising the reaction product of one or more ethylenically unsaturated monomers and maleic anhydride.

34. The finishing composition of claim 33, wherein one or more of the ethylenically unsaturated monomers comprises an alpha-olefin.

35. The finishing composition of claim 34, wherein the alpha-olefin comprises an alkene having from about 4 to about 12 carbon atoms.

36. A finishing composition of claim 14, wherein the anti-soiling agent comprises a methacrylic ester polymer.

37. A finishing composition of claim 14, wherein the anti-soiling agent comprises a colloidal alumina.

38. A finishing composition of claim 14, wherein the anti-soiling agent comprises a colloidal silica.

39. A finishing composition of claim 14, wherein the anti-soiling agent comprises a silsesquioxane.

40. A finishing composition of claim 14, wherein the anti-soiling agent comprises a polyvinylpyrrolidone.

41. A finishing composition of claim 14, wherein the anti-soiling agent comprises a water-soluble condensation polymer comprising the reaction product of formaldehyde and an amine.

42. A method of treating a fibrous substrate comprising the steps of:
(a) applying to the fibrous substrate a water dispersible urethane according to claim 1; and
(b) curing the finishing composition at or above ambient temperature.

43. The method of claim 42, wherein the finishing composition is cured at ambient temperature.

44. The method according to claim 42, wherein the urethane comprises the reaction product of a triisocyanate, a monomethoxy polyethylene oxide containing one hydroxy group, and stearyl alcohol.

45. A method of treating a fibrous substrate comprising the steps of:
(a) applying to the fibrous substrate a water dispersible finishing composition according to claim 14; and
(b) curing the finishing composition at or above ambient temperature.

46. The method of claim 45, wherein the finishing composition is cured at ambient temperature.

47. The method of claim 45, wherein the urethane comprises the reaction product of a triisocyanate, a monomethoxy polyethylene oxide containing one hydroxy group, and stearyl alcohol.

48. The method of claim 45, wherein the polyethylene oxide comprises a polyethylene oxide group and a (C₁₂ - C₂₄) alkoxy group.

49. A treated fibrous substrate comprising a fibrous substrate and a finishing composition according to claim 1.

50. The treated fibrous substrate of claim 49, wherein the fibrous substrate is a carpet.

51. A treated fibrous substrate comprising a fibrous substrate and a finishing composition according to claim 14.

52. The treated fibrous substrate of claim 51, wherein the fibrous substrate is a carpet.